

SEQUENCE LISTING

<110> Susan M. Freier

<120> ANTISENSE MODULATION OF HYDROXYSTEROID
11-BETA DEHYDROGENASE 1 EXPRESSION

<130> RTS-0428

<160> 122

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 1

tccgtcatcg ctcctcaggg

20

<210> 2

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 2

atgcattctg cccccaagga

20

<210> 3

<211> 1375

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (95)...(973)

<400> 3

attcagaggc tgctgcctgc ttaggaggtt gtagaaagct ctgtaggttc tctctgtgtg 60
tcctacagga gtcttcaggc cagctccctg tcgg atg gct ttt atg aaa aaa tat 115

Met Ala Phe Met Lys Lys Tyr

1

5

ctc ctc ccc att ctg ggg ctc ttc atg gcc tac tac tac tat tct gca 163
Leu Leu Pro Ile Leu Gly Leu Phe Met Ala Tyr Tyr Tyr Tyr Ser Ala
10 15 20aac gag gaa ttc aga cca gag atg ctc caa gga aag aaa gtg att gtc 211
Asn Glu Glu Phe Arg Pro Glu Met Leu Gln Gly Lys Lys Val Ile Val
25 30 35

aca ggg gcc agc aaa ggg atc gga aga gag atg gct tat cat ctg gcg 259

Thr	Gly	Ala	Ser	Lys	Gly	Ile	Gly	Arg	Glu	Met	Ala	Tyr	His	Leu	Ala			
40					45				50						55			
aag	atg	gga	gcc	cat	gtg	gtg	gtg	aca	gcg	agg	tca	aaa	gaa	act	cta			307
Lys	Met	Gly	Ala	His	Val	Val	Val	Thr	Ala	Arg	Ser	Lys	Glu	Thr	Leu			
				60					65					70				
cag	aag	gtg	gta	tcc	cac	tgc	ctg	gag	ctt	gga	gca	gcc	tca	gca	cac			355
Gln	Lys	Val	Val	Ser	His	Cys	Leu	Glu	Leu	Gly	Ala	Ala	Ser	Ala	His			
				75				80					85					
tac	att	gct	ggc	acc	atg	gaa	gac	atg	acc	ttc	gca	gag	caa	ttt	gtt			403
Tyr	Ile	Ala	Gly	Thr	Met	Glu	Asp	Met	Thr	Phe	Ala	Glu	Gln	Phe	Val			
		90					95					100						
gcc	caa	gca	gga	aag	ctc	atg	gga	gga	cta	gac	atg	ctc	att	ctc	aac			451
Ala	Gln	Ala	Gly	Lys	Leu	Met	Gly	Gly	Leu	Asp	Met	Leu	Ile	Leu	Asn			
	105					110					115							
cac	atc	acc	aac	act	tct	ttg	aat	ctt	ttt	cat	gat	gat	att	cac	cat			499
His	Ile	Thr	Asn	Thr	Ser	Leu	Asn	Leu	Phe	His	Asp	Asp	Ile	His	His			
	120					125				130					135			
gtg	cgc	aaa	agc	atg	gaa	gtc	aac	ttc	ctc	agt	tac	gtg	gtc	ctg	act			547
Val	Arg	Lys	Ser	Met	Glu	Val	Asn	Phe	Leu	Ser	Tyr	Val	Val	Leu	Thr			
				140					145					150				
gta	gct	gcc	ttg	ccc	atg	ctg	aag	cag	agc	aat	gga	agc	att	gtt	gtc			595
Val	Ala	Ala	Leu	Pro	Met	Leu	Lys	Gln	Ser	Asn	Gly	Ser	Ile	Val	Val			
			155					160					165					
gtc	tcc	tct	ctg	gct	ggg	aaa	gtg	gct	tat	cca	atg	gtt	gct	gcc	tat			643
Val	Ser	Ser	Leu	Ala	Gly	Lys	Val	Ala	Tyr	Pro	Met	Val	Ala	Ala	Tyr			
			170				175					180						
tct	gca	agc	aag	ttt	gct	ttg	gat	ggg	ttc	ttc	tcc	tcc	atc	aga	aag			691
Ser	Ala	Ser	Lys	Phe	Ala	Leu	Asp	Gly	Phe	Phe	Ser	Ser	Ile	Arg	Lys			
	185					190					195							
gaa	tat	tca	gtg	tcc	agg	gtc	aat	gta	tca	atc	act	ctc	tgt	gtt	ctt			739
Glu	Tyr	Ser	Val	Ser	Arg	Val	Asn	Val	Ser	Ile	Thr	Leu	Cys	Val	Leu			
	200				205				210					215				
ggc	ctc	ata	gac	aca	gaa	aca	gcc	atg	aag	gca	gtt	tct	ggg	ata	gtc			787
Gly	Leu	Ile	Asp	Thr	Glu	Thr	Ala	Met	Lys	Ala	Val	Ser	Gly	Ile	Val			
				220				225						230				
cat	atg	caa	gca	gct	cca	aag	gag	gaa	tgt	gcc	ctg	gag	atc	atc	aaa			835
His	Met	Gln	Ala	Ala	Pro	Lys	Glu	Glu	Cys	Ala	Leu	Glu	Ile	Ile	Lys			
				235				240					245					
ggg	gga	gct	ctg	cgc	caa	gaa	gaa	gtg	tat	tat	gac	agc	tca	ctc	tgg			883
Gly	Gly	Ala	Leu	Arg	Gln	Glu	Glu	Val	Tyr	Tyr	Asp	Ser	Ser	Leu	Trp			
			250				255					260						
acc	act	ctt	ctg	atc	aga	aat	cca	tgc	agg	aag	atc	ctg	gaa	ttt	ctc			931
Thr	Thr	Leu	Leu	Ile	Arg	Asn	Pro	Cys	Arg	Lys	Ile	Leu	Glu	Phe	Leu			
		265				270					275							
tac	tca	acg	agc	tat	aat	atg	gac	aga	ttc	ata	aac	aag	tag					973
Tyr	Ser	Thr	Ser	Tyr	Asn	Met	Asp	Arg	Phe	Ile	Asn	Lys	*					

280

285

290

```

gaactccctg agggctgggc atgctgaggg attttgggac tgttctgtct catgtttatc 1033
tgagctctta tctatgaaga catcttccca gagtgtcccc agagacatgc aagtcatggg 1093
tcacacctga caaatggaag gagttcctct aacatttgca aaatggaaat gtaataataa 1153
tgaatgtcat gcaccgctgc agccagcagt tgtaaaattg ttagtaaaca taggtataat 1213
taccagatag ttatattaaa tttatatctt atatataata atatgtgatg attaatacaa 1273
tattaattat aataaaggtc acataaactt tataaattca taactggtag ctataaottg 1333
agcttattca ggatggttct ttaaaccata aactgtacaa tg 1375

```

<210> 4

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 4

gtttctggga tagtccatat gcaa

24

<210> 5

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 5

agctccccct ttgatgatct c

21

<210> 6

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Probe

<400> 6

cagctccaaa ggaggaatgt gccct

25

<210> 7

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 7

gaaggtgaag gtcggagtc

19

<210> 8

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 8

gaagatggtg atgggatttc

20

<210> 9

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Probe

<400> 9

caagcttccc gttotcagcc

20

<210> 10

<211> 1350

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (128)... (1006)

<400> 10

ggatgagaca gaaggataga gaggaggaga gagagagaga gaagagaagc aaccagaaat 60

aggcagccaa taaaaaggag ccgcaattat ctgaagcctc aaggggcctg agccagggtcc 120

ctgttttg atg gca gtt atg aaa aat tac ctc ctc ccg atc ctg gtg ctc 169

Met Ala Val Met Lys Asn Tyr Leu Leu Pro Ile Leu Val Leu

1 5 10

tcc ctg gcc tac tac tac tat tct aca aat gaa gag ttc aga cca gaa 217

Ser Leu Ala Tyr Tyr Tyr Tyr Ser Thr Asn Glu Glu Phe Arg Pro Glu

15 20 25 30

atg ctc cag gga aag aaa gtg att gtc act ggg gcc agc aaa ggg att 265

Met Leu Gln Gly Lys Lys Val Ile Val Thr Gly Ala Ser Lys Gly Ile

35 40 45

gga aga gaa atg gca tat cat ctg tca aaa atg gga gcc cat gtg gta 313

Gly Arg Glu Met Ala Tyr His Leu Ser Lys Met Gly Ala His Val Val

50 55 60

ttg act gcc agg tcg gag gaa ggt ctc cag aag gta gtg tct cgc tgc 361

Leu Thr Ala Arg Ser Glu Glu Gly Leu Gln Lys Val Val Ser Arg Cys

65 70 75

ctt gaa ctc gga gca gcc tct gct cac tac att gct ggc act atg gaa 409

Leu Glu Leu Gly Ala Ala Ser Ala His Tyr Ile Ala Gly Thr Met Glu

80 85 90

gac atg aca ttt gcg gag caa ttt att gtc aag gcg gga aag ctc atg 457

Asp Met Thr Phe Ala Glu Gln Phe Ile Val Lys Ala Gly Lys Leu Met

95 100 105 110

ggc gga ctg gac atg ctt att cta aac cac atc act cag acc tcg ctg 505

Gly Gly Leu Asp Met Leu Ile Leu Asn His Ile Thr Gln Thr Ser Leu

115 120 125

tct ctc ttc cat gac gac atc cac tct gtg cga aga gtc atg gag gtc 553
 Ser Leu Phe His Asp Asp Ile His Ser Val Arg Arg Val Met Glu Val
 130 135 140

aac ttc ctc agc tac gtg gtc atg agc aca gcc gcc ttg ccc atg ctg 601
 Asn Phe Leu Ser Tyr Val Val Met Ser Thr Ala Ala Leu Pro Met Leu
 145 150 155

aag cag agc aat ggc agc att gcc gtc atc tcc tcc ttg gct ggg aaa 649
 Lys Gln Ser Asn Gly Ser Ile Ala Val Ile Ser Ser Leu Ala Gly Lys
 160 165 170

atg acc cag cct atg att gct ccc tac tct gca agc aag ttt gct ctg 697
 Met Thr Gln Pro Met Ile Ala Pro Tyr Ser Ala Ser Lys Phe Ala Leu
 175 180 185 190

gat ggg ttc ttt tcc acc att aga aca gaa ctc tac ata acc aag gtc 745
 Asp Gly Phe Phe Ser Thr Ile Arg Thr Glu Leu Tyr Ile Thr Lys Val
 195 200 205

aac gtg tcc atc act ctc tgt gtc ctt ggc ctc ata gac aca gaa aca 793
 Asn Val Ser Ile Thr Leu Cys Val Leu Gly Leu Ile Asp Thr Glu Thr
 210 215 220

gct atg aag gaa atc tct ggg ata att gac gcc cta gct tct ccc aag 841
 Ala Met Lys Glu Ile Ser Gly Ile Ile Asp Ala Leu Ala Ser Pro Lys
 225 230 235

gag gag tgc gcc ctg gag atc atc aaa ggc aca gct cta cgc aaa agc 889
 Glu Glu Cys Ala Leu Glu Ile Ile Lys Gly Thr Ala Leu Arg Lys Ser
 240 245 250

gag gtg tac tat gac aaa ttg cct ttg act cca atc ctg ctt ggg aac 937
 Glu Val Tyr Tyr Asp Lys Leu Pro Leu Thr Pro Ile Leu Leu Gly Asn
 255 260 265 270

cca gga agg aag atc atg gaa ttt ttt tca tta cga tat tat aat aag 985
 Pro Gly Arg Lys Ile Met Glu Phe Phe Ser Leu Arg Tyr Tyr Asn Lys
 275 280 285

gac atg ttt gta agt aac tag gaactcctga gccctggtga gtggtcttag 1036
 Asp Met Phe Val Ser Asn *
 290

aacagtcctg cctcatactt cagtaagccc tacccacaaa agtatctttc cagagataca 1096
 caaatcttgg ggtacacctc atcatgagaa attcttgcaa cacttgca ca gtgaaaatgt 1156
 aattgtaata aatgtcacaa accactttgg gcctgcagtt gtgaacttga ttgtaactat 1216
 ggatataaac acatagtggg tgtatcggtt ttacctcaca ctgaatgaaa caatgataac 1276
 taatgtaaca ttaaataata taaaggtaat atcaacttcg taaatgcaaa aaaaaaaaaa 1336
 aaaaaaaaaa aaaa 1350

<210> 11
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR Primer

<400> 11
 ggcggactgg acatgctt

<210> 12
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 12
gagtggatgt cgtcatggaa ga

22

<210> 13
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Probe

<400> 13
ttctaaacca catcactcag acctcgtgt c

31

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 14
ggcaaattca acggcacagt

20

<210> 15
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 15
gggtctcgct cctggaagat

20

<210> 16
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Probe

<400> 16
aaggccgaga atgggaagct tgtcatc 27

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 17
agaatagtag tagtaggcca 20

<210> 18
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 18
gtgacaatca ctttctttcc 20

<210> 19
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 19
ctgcttcagc atgggcaagg 20

<210> 20
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 20
attgctctgc ttcagcatgg 20

<210> 21
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 21

tctgtgtcta tgaggccaag

20

<210> 22

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 22

gctgtttctg tgtctatgag

20

<210> 23

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 23

cctttgatga tctccagggc

20

<210> 24

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 24

ctaagcaggc agcagcctct

20

<210> 25

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 25

acagagcttt ctacaacctc

20

<210> 26
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 26
ataaaaagcca tccgacaggg 20

<210> 27
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 27
cttgagcat ctctggtctg 20

<210> 28
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 28
taccaccttc tgtagagttt 20

<210> 29
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 29
tccaagctcc aggcagtggg 20

<210> 30
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 30
gtgccagcaa tgtagtgtgc 20

<210> 31
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 31
caaattgctc tgcgaagtc 20

<210> 32
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 32
tcttcccatg agctttcctg 20

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 33
agaatgagca tgtctagtcc 20

<210> 34
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 34
gcacatggtg aatatcatca 20

<210> 35
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 35

ccaogtaact gaggaagttg

20

<210> 36

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 36

aacaatgctt ccattgctct

20

<210> 37

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 37

tttcccagcc agagaggaga

20

<210> 38

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 38

tccaaagcaa acttgcttgc

20

<210> 39

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 39

acagagagtg attgatacat

20

<210> 40

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 40
atggactatc ccagaaactg 20

<210> 41
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 41
cctttggagc tgcttgcata 20

<210> 42
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 42
tccccctttg atgatctcca 20

<210> 43
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 43
cttcttggcg cagagctccc 20

<210> 44
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 44
agagtgggtcc agagtgagct 20

<210> 45
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 45
ctgatcagaa gagtgggtcca 20

<210> 46
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 46
tgagtagaga aattccagga 20

<210> 47
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 47
agcatgccca gccctcaggg 20

<210> 48
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 48
cccaaaatcc ctcagcatgc 20

<210> 49
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 49

gggaagatgt cttcatagat

20

<210> 50

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 50

gtgtgaccca tgacttgcat

20

<210> 51

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 51

tccatttggtc aggtgtgacc

20

<210> 52

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 52

catttccatt ttgcaaattgt

20

<210> 53

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 53

cctatgttta ctaacaattt

20

<210> 54

<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 54
tagctaccag ttatgaattt 20

<210> 55
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 55
agaaccatcc tgaataagct 20

<210> 56
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 56
tgtacagttt atggtttaaa 20

<210> 57
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide.

<400> 57
ctctatcctt ctgtctcatc 20

<210> 58
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 58

gaggcttcag ataagtgcgg

20

<210> 59

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 59

ggacctggct caggcccctt

20

<210> 60

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 60

atcaaacagg gacctggctc

20

<210> 61

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 61

ataactgccca tcaaacaggg

20

<210> 62

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 62

gagcaccagg atcgggagga

20

<210> 63

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 63
ccagggagag caccaggatc 20

<210> 64
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 64
ttcatttgta gaatagtagt 20

<210> 65
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 65
gtotgaactc ttcatttgta 20

<210> 66
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 66
agcattttctg gtotgaactc 20

<210> 67
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 67
ggccccagtg acaatcactt 20

<210> 68
<211> 20
<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 68

tttgctggcc ccagtgacaa

20

<210> 69

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 69

tattccaatc cctttgctgg

20

<210> 70

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 70

cagatgatat gccatttctc

20

<210> 71

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 71

ccatttttga cagatgatat

20

<210> 72

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 72

acatgggctc ccatttttga

20

<210> 73
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 73
agtcaatacc acatgggctc 20

<210> 74
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 74
agttcaaggc agcgagacac 20

<210> 75
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 75
ggctgctccg agttcaaggc 20

<210> 76
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 76
agtgagcaga ggctgctccg 20

<210> 77
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 77
aataaattgc tccgcaaattg 20

<210> 78
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 78
cccatgagct ttccccgcctt 20

<210> 79
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 79
cgaggtctga gtgatgtggt 20

<210> 80
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 80
cagagtggat gtcgtcatgg 20

<210> 81
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 81
ttgacctcca tgactottcg 20

<210> 82
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 82

tgaggaagtt gacctccatg

20

<210> 83

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 83

gctgccattg ctctgcttca

20

<210> 84

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 84

gcaatgctgc cattgctctg

20

<210> 85

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 85

atgacggcaa tgctgccatt

20

<210> 86

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 86

cataggctgg gtcattttcc

20

<210> 87
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 87
aaacttgctt gcagagtagg 20

<210> 88
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 88
catccagagc aaacttgctt 20

<210> 89
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 89
gaaaagaacc catccagagc 20

<210> 90
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 90
tctaattgtg gaaaagaacc 20

<210> 91
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 91
ccttggttat gtagagttct 20

<210> 92
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 92
atggacacgt tgaccttggt 20

<210> 93
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 93
acagagagtg atggacacgt 20

<210> 94
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 94
tcaattatcc cagagatttc 20

<210> 95
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 95
gatctccagg gcgcactcct 20

<210> 96
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 96

gctgtgcctt tgatgatctc

20

<210> 97

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 97

tttgcgtaga gctgtgcctt

20

<210> 98

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 98

aggcaatttg tcatagtaca

20

<210> 99

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 99

caagcaggat tggagtcaaa

20

<210> 100

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 100

atgatottcc ttcttgggtt

20

<210> 101

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 101
aattccatga tcttccttcc 20

<210> 102
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 102
catgtcctta ttataatatc 20

<210> 103
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 103
caggagttcc tagttactta 20

<210> 104
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 104
tctaagacca ctcaccaggg 20

<210> 105
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 105
gggttactg aagtatgagg 20

<210> 106
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 106
tctctggaaa gatacttttg 20

<210> 107
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 107
atttgtgtat ctctggaaag 20

<210> 108
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 108
gtacccccaaa atttgtgtat 20

<210> 109
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 109
ttctcatgat gaggtgtacc 20

<210> 110
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 110

tggtgcaaga atttctcatg

20

<210> 111

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 111

actgtgcaag tggtgcaaga

20

<210> 112

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 112

tacattttca ctgtgcaagt

20

<210> 113

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 113

tgacatttat tacaattaca

20

<210> 114

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 114

ggtttgtgac atttattaca

20

<210> 115

<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 115
caaagtgggtt tgtgacattt 20

<210> 116
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 116
tcaagttcac aactgcaggc 20

<210> 117
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 117
catagttaca atcaagttca 20

<210> 118
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 118
acaaccacta tgtgtttata 20

<210> 119
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 119

agccgataca accactatgt

20

<210> 120

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 120

gtttcattca gtgtgaggta

20

<210> 121

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 121

gaagttgata ttacctttat

20

<210> 122

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 122

tttacgaagt tgatattacc

20